

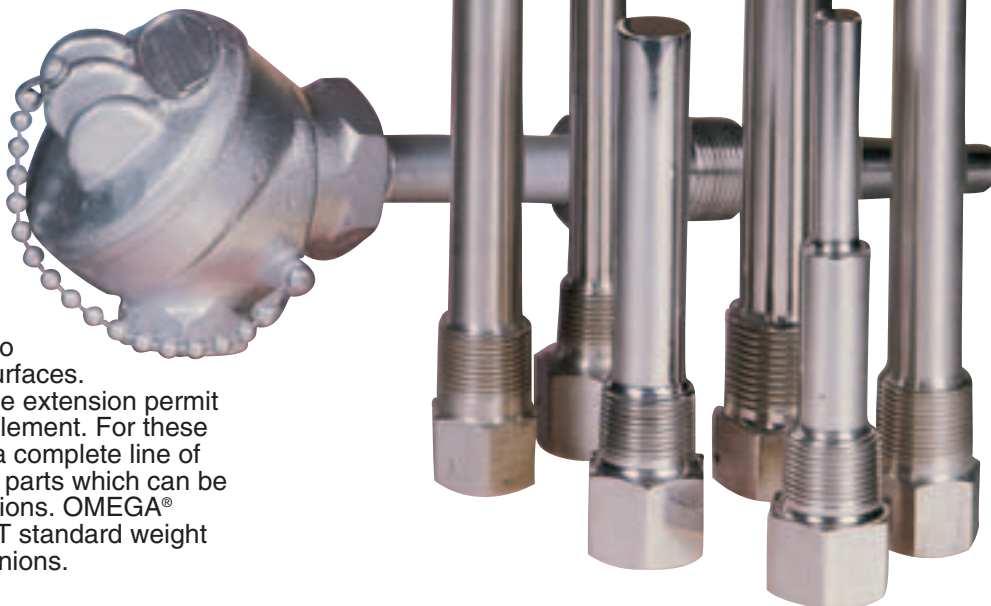
Industrial Thermowells and Thermocouple Assemblies

OMEGA® offers the industrial and research user a complete line of thermocouple assemblies. OMEGA's standard types are listed in this section, which includes a wide selection of component parts, partial assemblies, and complete assemblies ready for installation.

Many other styles of components and assemblies are also available. OMEGA is always glad to quote based on your special needs.

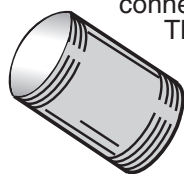
Thermocouple Extension Assemblies

Selection of thermocouple heads is made on the basis of operational requirements, accessibility, and/or the need to avoid direct contact with hot surfaces. Also, it is often required that the extension permit removal of the thermocouple element. For these requirements, OMEGA offers a complete line of configurations and component parts which can be configured for specific applications. OMEGA® extensions are made of ½" NPT standard weight galvanized steel nipples and unions.



Type 2 Nipple Extension

A Type 2 assembly is used to connect the head to a thermowell.



The length is measured from the bottom of the head to the top of the well. Available assembled in lengths of 0", 13 mm (½"), 25.4 mm (1"), 38 mm (1½"), 51 mm (2"), 64 mm (2½"), 76 mm (3"), 102 mm (4"), and 127 mm (5").

Specify: Type 2-(length).

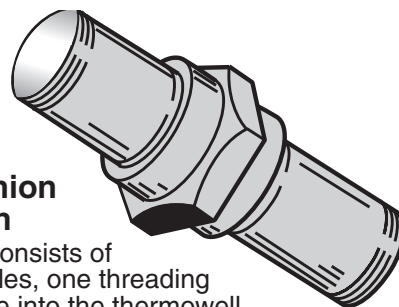
\$5

\$10

Type 4 Nipple Union Nipple Extension

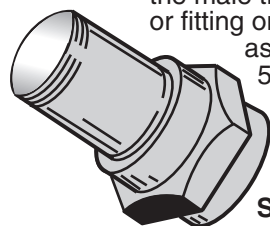
A Type 4 assembly consists of a union and two nipples, one threading into the head and one into the thermowell. This type permits easy removal of the head and element from the well. Available assembled in lengths between 51 mm (2") and 305 mm (12").

Specify: Type 4-(length)



Type 3 Nipple Union Extension

A Type 3 assembly uses a nipple and a union to connect a head with the male thread of a protection tube or fitting on a ceramic tube. Available assembled in lengths of



51 mm (2"), 64 mm (2½"), 76 mm (3"), 89 mm (3½"), 102 mm (4"), 114 mm (4½"), 127 mm (5"), 152 mm (6"), and 178 mm (7").

Specify: Type 3-(length)

\$8

Non-Standard Extensions

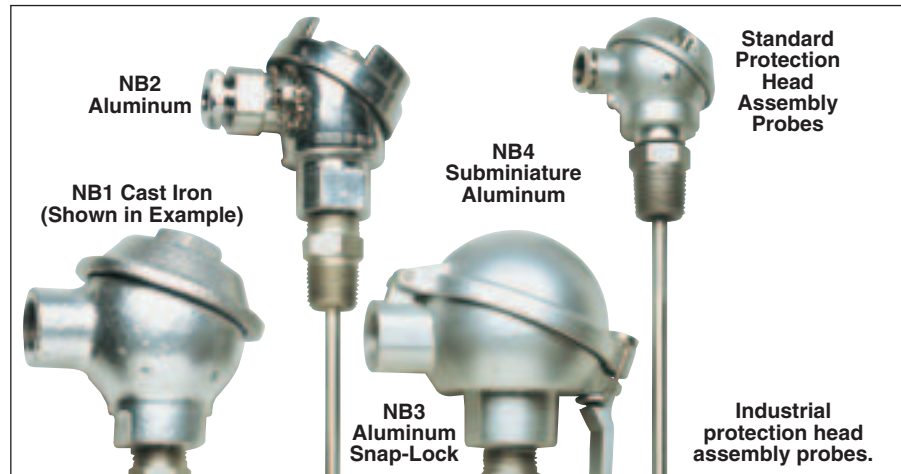
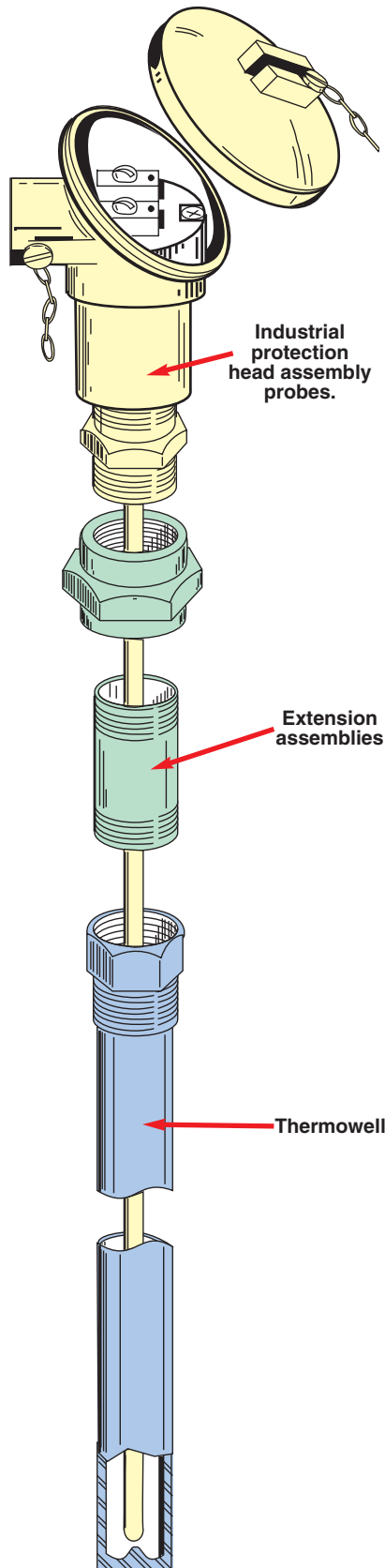
Pricing: Add \$3 for each additional 152 mm (6") or fraction thereof up to 1219 mm (48"). Over 1219 mm (48"), please consult the Sales Department.

Ordering Example:

Type 2-12 indicates Type 2 extension with 304 mm (12") length. Pricing for standard Type 2 is \$5, additional 178 mm (7") nipple length is \$4, for a total price of \$9.

Head and Well Assemblies

Industrial Protection Head Assembly Probes Inserted into Thermowells



The ½" NPT mounting thread allows ¼" OD industrial protection head assemblies to be put directly into OMEGA® thermowells whose bore is 0.260" without having to use any additional hardware. In this case, the probe length must be the same as the element (stem) length of the desired thermowell.

When an extension assembly is desired, a type 3 extension assembly can be inserted to separate the protection head from the thermowell. In this case the probe length would be the same as the element length (stem length) of the desired thermowell plus the assembled extension assembly length.

Spring Loaded Assemblies

Using spring loaded industrial protection head assemblies guarantees a positive contact between the sensitive portion of the temperature probe and the bottom of the thermowell, reducing response time. OMEGA also recommends the use of a thermally conductive grease, such as our OT-201, to further aid in reducing response time.

How To Order

Ordering an HWA assembly is easy. Simply follow the model number format below:

Example: HWA / NB1-CASS-14G-12-TBSL / 3-6 / ½-260S-U4½-304SS

NB1-CASS-14G-12-TBSL (See page A-140)\$62.00

NB1 cast iron head, thermocouple Type K, 304 SS sheath, 6 mm (¼") O.D., grounded junction, 305 mm (12") length, with spring-loaded terminal block. Thermocouples as well as RTD assemblies with a 6 mm (¼") diameter can be used. Length should equal the stem (element) length of the desired thermowell plus the assembled length of the Type 3 extension assembly if any. (See thermowell pages, for stem [element] lengths.)

3-6 (See page B-4)\$8.00

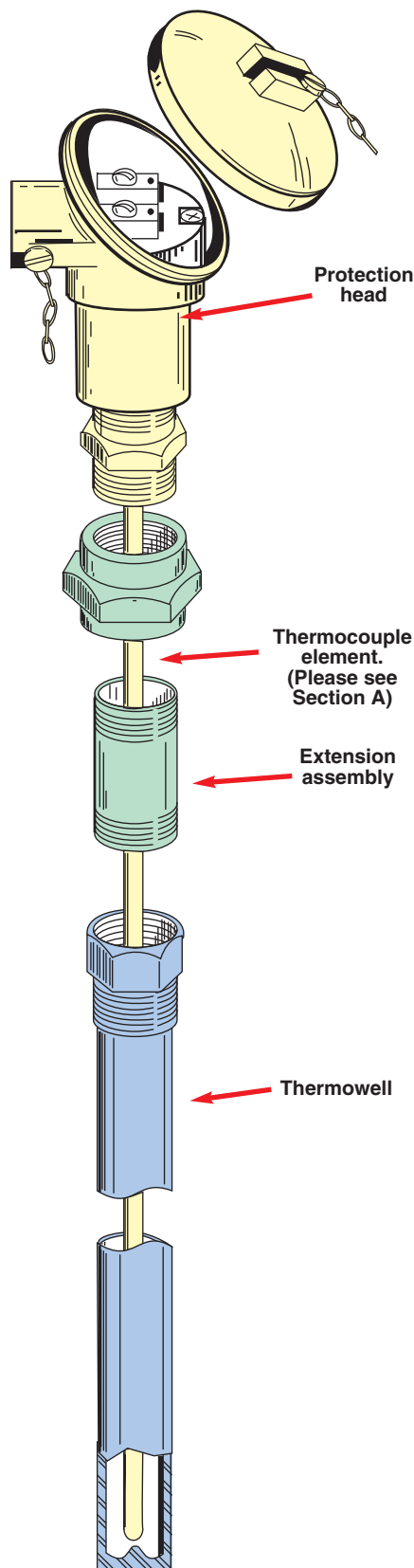
Type 3 extension assembly; 152 mm (6") long assembled. A Type 3 extension assembly is proper in this configuration. If no extension assembly is needed, do not include the space in the HWA part number.

½-260S-U4½-304SS (See page B-16).....\$26.50

Standard threaded well for ¼" element, ½" NPT thread, 114 mm (4½") insertion length, 304SS material. For a complete listing of thermowells, see OMEGA® thermowells individual pages for details.

Total HWA assembly price.....\$96.50

Ceramic Insulated Thermocouple Elements Inserted into Thermowells



Available Element Types



Ceramic insulated thermocouple elements can be used to make HWA assemblies. Here, the protection head is attached to the thermowell with a Type 2 extension assembly. The thermocouple element is housed inside and is wired to the terminal block inside the protection head. Spring loading is not available in this configuration.

A Type 4 extension assembly can also be used in this type of HWA assembly. This nipple-union-nipple extension assembly allows for disassembly of the unit without having to spin the protection head (which may be hooked up to conduit).

How To Order

Follow the format below to order this type of head and well assembly:

Example: HWA / **NB1-2** / **2-3** / **DH-1-14-K-12** / **1-385H-U4½-304SS**

NB1-2 (See page B-7)\$26

NB1 type cast iron protection head with a two-position terminal block. See thermocouple head selection guide for a complete listing of available protection heads.

2-3 (See page B-4)\$5

Type 2 extension assembly; 76 mm (3") long assembled. Either a Type 2 or Type 4 extension assembly can be used with this style HWA. See page B-4 for a complete selection of extension assemblies.

DH-1-14-K-12 (See page A-13)\$17

Double hole ceramic insulated thermocouple element, type K, 14 AWG, 305 mm (12") length. The length of this thermocouple should be the element (stem) length of the thermowell desired 152 mm (6"), plus the extension assembly length 76 mm (3"), plus 76 mm (3"), for a 305 mm (12") total.

1-385H-U4½-304SS (See page B-22).....\$42

Heavy duty thermowell, 1" NPT thread, 9.8 mm (0.385") bore for up to 9.5 mm (3/8") dia. elements. 114 mm (4½") insertion length, 152 mm (6") stem/element length. The bore size of the well, 9.8 mm (0.385") in this case, must exceed the outside dimensions of the ceramic insulators

Total HWA price\$90